

DETAILED ACTION

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Andrew Turner on 10/7/2010.

The application has been amended as follows and which is supported by Figs. 3-4 and specification, paragraphs 61-62.

In the claims:

Claim 1. (Currently Amended) An electrostatic spray system installation comprising: a vertical member having an elongate length and a transverse width and forming two outside surfaces along opposing sides of the length, the vertical member being positioned above a conveyed substrate such that the transverse width is aligned with an axis of travel of the substrate;

parallel flow distribution modules made from non conductive materials that are coupled to the vertical member, the parallel flow distribution modules are positioned adjacent to the two outside surfaces of the vertical member for providing continuous parallel sprays;

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a conductive surface including a pair of charging strips, each strip being mounted to one of the two outside surfaces of the vertical member and facing a flow distribution module and maintained at a voltage of a minimum of 20,000 volts, wherein each of the flow distribution modules is supplied by a controlled flow of a flowable material, and wherein the flow distribution modules can be given different dimensions and can be positioned to give various spray configurations;

one or more target bars formed with a length oriented parallel to and spaced from the vertical member with the substrate conveyed therebetween each target bar being maintained at a different electrical potential from that of the charging strips thereby defining one or more electrostatic fields, in which each target bar is separate from a catch tray and formed with a height having high parts and low parts, the high parts being spaced along the length to create distinctive electrical fields for providing continuous parallel sprays onto the substrate by attracting the spray towards the high parts and away from the low parts; and

grooves in the non-conductive flow distribution flow modules, said grooves disposed over the conductive surface and said grooves being parallel with the electrostatic field and are distributed over the width of the flow distribution modules.

Claim 6. (Withdrawn).

Claim 26. (Previously Presented) An electrostatic flow distribution and charging system, for the spraying of a flowable material by distribution and charging to a suitable

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high voltage and the spraying of the material by a multiplicity of parallel ligamental streams, wherein said system comprises:

an assembly of one or more insulated non-conductive flow distribution modules, ~~said modules comprising grooves~~, a conductive surface with electrical connection to such surface, whereby the flowable material is electrically insulated in said system except for said conductive surface and electrical connection, means for application of an electrostatic field, one or more target bars to define the electrostatic field, and one or more catch trays, ~~each groove being aligned with the direction of the electrostatic field,~~ and grooves in the non-conductive flow distribution flow modules and over the conductive surface, said grooves being parallel with the electrostatic field and are distributed over the width of the flow distribution modules.

whereby:

the flowable material is sprayed with minimum loss from electrical currents through said assembly, the flow of material being distributed and guided through said grooves in the non-conductive flow distribution modules and over the electrically conductive part of said assembly substantially parallel with the electrostatic field, the application of the electrostatic field providing a positive force or pressure to move the material that is sprayed, through said grooves, the flow through each groove in a flow distribution module being substantially equal or independent of specific geometry of groove or module, to hydrodynamically distribute the flowable material to be sprayed over a length of a distribution module, while the flow to each distribution module is controlled separately so that long, multiple and shaped spray assemblies can be made

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with a precise distribution of flow, while different flowable materials can be used in sections of the spray assembly, and wherein the target bars that define the electro static field are separate from any catch trays and shaped to create different spray patterns.

Claim 27. (New) An electrostatic spray system installation comprising:

one or more vertical members, each having an elongate length with two outside surfaces formed along opposing sides of the length;

parallel flow distribution modules made from non conductive materials that are clamped relative to each other, the parallel flow distribution modules are positioned adjacent to the two outside surfaces of the one or more vertical members for providing parallel sprays onto a substrate formed of a non conducting material;

charging strips, each charging strip being mounted to an intermediate portion of one of the two outside surfaces of the one or more vertical members, each charging strip being oriented to face a flow distribution module and maintained at a voltage of a minimum of 20,000 volts;

sheets formed of a non conductive material, each sheet being disposed over a lower portion of one of the outside surfaces, wherein the charging strips and the sheets collectively space the flow distribution modules away from the outside surfaces of the one or more vertical members, wherein each of the flow distribution modules is supplied by a controlled flow of a flowable material, and wherein the flow distribution modules can be given different dimensions and can be positioned to give various spray configurations, and wherein the sheets extend beyond the flow distribution modules and

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the one or more vertical members for providing separate parallel sprays spaced 30 to 40 mm from each other; and

a pair of target bars oriented parallel to the one or more vertical members for defining electrostatic fields with the charging strips.

and grooves in the non-conductive flow distribution flow modules and over the charging strips, said grooves being parallel with the electrostatic field and are distributed over the width of the flow distribution modules.

Allowable Subject Matter

Claims 1-3, 5, 7-27 are allowed. Regarding claims 1, 26, and 27, the closest prior art is Wichmann (US Patent No. 5209410), which teaches a vertical member, flow distribution modules coupled to the member, and a conductive surface. Wichmann does not teach parallel grooves distributed over the width of the non-conductive flow distribution modules and over the charging strips, with said grooves being parallel to the electrostatic field.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert Hilton whose telephone number is (571)-270-5519. The examiner can normally be reached on Monday through Friday from 8:00 AM to 5:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571)-272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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